

MARKED-UP COPY OF AMENDED CLAIMS:

4. (Amended) ~~The corpectomy device of claim 3, A corpectomy~~  
device, comprising:

a) a first member having a longitudinal axis;

b) a second member moveable in an axial direction with respect  
to said first member; and

c) a locking clip engagable with said first member and said  
second member and moveable between a first unlocked position  
and a second locked position for locking said first member and  
said second member in a relative axial position with respect  
to one another;

said locking clip and said second member including  
interengaging threads for locking said first member and said  
second member in a relative axial position with respect to one  
another; and

wherein said locking clip ~~being~~ is rotatably mounted on said  
first member for rotation into and out of engagement with said  
threads.

5. (Amended) The corpectomy device of claim 1, wherein ~~at~~  
~~least one of said first member and said second member~~  
comprises a hollow member, said first member and said second  
member defining a chamber therebetween.

11. (Amended) ~~The corpectomy device of claim 10, wherein A~~  
corpectomy device, comprising:

a) a first member comprising a hollow member having a  
longitudinal axis and perforations for permitting ingrowth of  
bone, blood vessels and other tissue;

b) a second member moveable in an axial direction with respect to said first member and having perforations for permitting ingrowth of bone, blood vessels and other tissue, said second member defining a chamber with said first member and being slidably and telescopingly received in a passageway of said first member for movement in said axial direction; and

c) a locking clip engagable with said first member and said second member and moveable between a first unlocked position and a second locked position for locking said first member and said second member in a relative axial position with respect to one another;

d) said perforations includeing:

ai) elongated perforations extending in the axial direction on one of said first member and said second member; and

bii) substantially circular perforations on the other of said first member and said second member.

14. (Amended) ~~The corpectomy device of claim 13,~~ A corpectomy device, comprising:

a) a first member comprising a hollow member having a longitudinal axis and an outer axial end with an outwardly extending flange including teeth on a surface thereof for engaging bone;

b) a second member moveable in an axial direction with respect to said first member and having an outer axial end with an outwardly extending flange including teeth on a surface thereof for engaging bone, said second member defining a chamber with said first member and being slidably and

telescopingly received in a passageway of said first member for movement in said axial direction; and

c) a locking clip engagable with said first member and said second member and moveable between a first unlocked position and a second locked position for locking said first member and said second member in a relative axial position with respect to one another;

~~wherein said flanges are being~~ disposed at an acute angle with respect to ~~a common~~said longitudinal axis ~~of said first member and said second member.~~

16. (Amended) The ~~corpectomy device of claim 15,~~ A corpectomy device, comprising:

a) a first member comprising a hollow, outer tubular member having a longitudinal axis, a passage, and a hole;

b) a second member comprising an inner tubular member moveable in an axial direction with respect to said first member, said second member defining a chamber with said first member and being slidably and telescopingly received in said passage of said first member for movement in said axial direction; and

c) a locking clip engagable with said first member and said second member and moveable between a first unlocked position and a second locked position for locking said first member and said second member in a relative axial position with respect to one another, said locking clip including~~wherein said outer tubular member includes a hole and said locking clip includes a wedge shaped to be engaged in said hole so that said locking clip engages said outer tubular member.~~

19. (Amended) ~~The corpectomy device of claim 18, wherein A~~  
corpectomy device, comprising:

a) a first member comprising a hollow, outer tubular member  
having a longitudinal axis and a passage;

b) a second member comprising an inner tubular member moveable  
in an axial direction with respect to said first member and  
having an outer surface including first surface portions and  
second surface portions, said second member defining a chamber  
with said first member and being slidably and telescopingly  
received in said passage of said first member for movement in  
said axial direction; and

c) a locking clip engagable with said first member and said  
second member and moveable between a first unlocked position  
and a second locked position for locking said first member and  
said second member in a relative axial position with respect  
to one another, said locking clip ~~has~~having an inner surface  
defining an aperture, said inner surface including third  
surface portions and fourth surface portions, said third  
surface portions being shaped to correspond to said first  
surface portions so that said inner tubular member is  
telescopingly received in said passage when said locking clip  
is in its unlocked position.

20. (Amended) ~~The corpectomy device of claim 15, wherein A~~  
corpectomy device, comprising:

a) a first member comprising a hollow, outer tubular member  
having a longitudinal axis and a passage;

b) a second member comprising an inner tubular member moveable in an axial direction with respect to said first member, said second member defining a chamber with said first member and being slidably and telescopingly received in said passage of said first member for movement in said axial direction; and  
c) a locking clip engagable with said first member and said second member and moveable between a first unlocked position and a second locked position for locking said first member and said second member in a relative axial position with respect to one another, said locking clip having an inner surface including third surface portions and fourth surface portions, each being curvilinear and having different radii of curvature.

25. (Amended) ~~The corpectomy device of claim 15,~~ A corpectomy device, comprising:

a) a first member comprising a hollow, outer tubular member having a longitudinal axis and a passage;  
b) a second member comprising an inner tubular member moveable in an axial direction with respect to said first member, said second member defining a chamber with said first member and being slidably and telescopingly received in said passage of said first member for movement in said axial direction; and  
c) a locking clip engagable with said first member and said second member and moveable between a first unlocked position and a second locked position for locking said first member and said second member in a relative axial position with respect to one another;

~~wherein said~~ outer tubular member ~~includes~~ including a wall having an inner surface defining said passage and an outer surface, said outer surface defining a cross-sectional shape different from ~~asaid~~ cross-sectional shape of said inner tubular member and said passage.

26. (Amended) ~~The corpectomy device of claim 15, wherein A~~  
corpectomy device, comprising:

a) a first member comprising a hollow, outer tubular member having a longitudinal axis and a passage;

b) a second member comprising an inner tubular member moveable in an axial direction with respect to said first member, said second member defining a chamber with said first member and being slidably and telescopingly received in said passage of said first member for movement in said axial direction; and

c) a locking clip engagable with said first member and said second member and moveable between a first unlocked position and a second locked position for locking said first member and said second member in a relative axial position with respect to one another;

said outer tubular member ~~includes~~ including a wall having an inner surface defining said passage and an outer surface, said outer surface defining a circular cross-sectional shape.

REMARKS

This is response to the Official Action mailed August 15, 2000, in which Claims 27-33 were allowed, 1-3 and 5-26 were rejected and Claim 4 was objected to. A petition for a three-month extension for time, extending the time for response from November 15, 2000 to and including February 15, 2001, is enclosed herewith.

The Examiner's indication that Claims 11, 14, 16, 17 and 19-26 would be allowable if rewritten to overcome the rejection under 35 U.S.C. § 112, second paragraph and to be presented in independent form is greatly appreciated. Claim 4 was indicated to be directed to allowable subject matter and Claims 27-33 were allowed, which is also appreciated. In response, Applicants have amended Claims 4, 11, 14, 16, 19, 20, 25 and 26 to be presented in independent form. Claim 17 and Claims 21-24 depend from claims now presented in independent form and indicated to be directed to allowable subject matter.

Claims 6-26 were rejected under 35 U.S.C. § 112, second paragraph as being indefinite. More specifically, the Official Action states that it is unclear how the second member is received in a passageway of the first member, where Claim 6 requires that at least one of the two members comprises a hollow member. In response, Claim 5 has been amended to require that the first member is a hollow member. Applicants now consider Claims 5 and 6 to be clear and definite.

Claims 1, 3, 5, 6, 8, 9, 15 and 18 were rejected under 35 U.S.C. § 102(b) as being anticipated by *Rogers*, U.S. Patent No. 5,336,223 ("*Rogers*"). *Rogers* discloses a first member 1 having a threaded rod 5, a second member 2 having a threaded tubular member 10, and a collar 6. The collar 6 has a threaded bore for receiving the threaded rod 5 and a threaded cavity 8 for receiving member 10. Column 2, lines 25-55. This device is assembled and placed between the vertebrae of a patient. The collar 6 is rotated to expand the device by linearly displacing element 2 with respect to element 1. Column 3, lines 45-53.

Claim 1 requires a locking clip movable between a first unlocked position and a second locked position. The locking clip locks the axial position of the first member with respect to the second member when the locking clip is moved to the locked position. By contrast, the device disclosed by *Rogers* requires small holes 9 to receive locking screws so that rotation of the collar 6 is prevented and the position of the first member is fixed. See column 2, lines 57-60. The collar 6 does not have a locked position and an unlocked position and does not lock the position of the first member with respect to the second member. The collar is utilized to adjust the position of these members via the threads when the collar is rotated. The screws fix can the position of the collar with respect to the first member when the collar 6 is in virtually any position. *Rogers* does not disclose a locking clip as required by Claim 1. Claims 3, 5, 6, 8, 9, 15 and 18



depend directly or indirectly upon Claim 1. Thus, Claims 1, 3, 5, 6, 8, 9, 15 and 18 are unanticipated by Rogers and otherwise allowable.

Claims 1 and 2 were rejected under 35 U.S.C. § 102(b) as being anticipated by Jeanson, et al., German Patent No. 19604246 ("Jeanson"). Jeanson is in the German language. Based upon the enclosed English abstracts of Jeanson and the figures, Jeanson discloses a first member 1 and a second member 2. The second member 2 has outwardly projecting ridges for engaging grooves in the first member 1. The ridges are shaped to allow the second member 2 to be withdrawn from the first member 1 but prevents further insertion of the second member 2 into the first member 1. The device is implanted in a patient and expanded to the appropriate position.

Jeanson does not disclose a locking clip as required by Claim 1. Jeanson discloses a first member and a second member and the interengaging ridges and grooves are relied upon to lock the members in position with respect to one another. Jeanson discloses a device in which the second member is only moveable in one direction with respect to the first member. By contrast, Claim 1 is not limited to movement of the second member in one direction with respect to the first member. Thus, the separate locking clip of Claim 1 may be provided in a device that can be adjusted in either direction prior to utilizing the locking clip to lock the

position of the first and second member with respect to one another.

The Examiner asserts that *Jeanson* discloses a locking clip 4. However, as shown in Fig. 2 of *Jeanson*, reference numeral 4 refers to a feature of the second member 2 and Claim 1 requires a first member, a second member and a locking clip. *Jeanson* does not disclose the locking clip of Claim 1. Claim 2 depends directly from Claim 1. Thus, Claims 1 and 2 are unanticipated by *Jeanson* and are otherwise allowable.

Claims 1, 5, 6, 10, and 12 were rejected under 35 U.S.C. § 102(b) as being anticipated by *Biedermann*, WO 96/37170 ("*Biedermann*"). *Biedermann* is in the German language. Based upon the enclosed English abstract, *Biedermann* discloses a device having a middle section with an upper portion threaded in a first direction and a lower portion threaded in a second direction. The middle section engages tubular parts 7 and 9 which have threaded passages for receiving the middle section. A screw 11 locks one of the tubular members 7 with respect to the middle section 2.

Claim 1, however, requires a locking clip having a first position and a second position for locking a first member with respect to a second member. *Biedermann* does not disclose the locking clip required by Claim 1. The middle section 2 is not movable between a first unlocked position and a second locked position. By contrast, the middle section is rotatable for adjusting the position of the first and second


members. A separate screw 11 is required for locking the position of the members with respect to the middle section. Claims 5, 6, 10, and 12 depend directly or indirectly upon Claim 1. Thus, Claims 1, 5, 6, 10 and 12, are unanticipated by *Biedermann* and otherwise allowable.

Claims 1, 5, 6, 10, 12 and 13 were rejected under 35 U.S.C. § 102(b) as being anticipated by *Saggar*, U.S. Patent No. 5,702,455 ("*Saggar*"). *Saggar*, like *Biedermann*, discloses a first and second tubular member having threaded passages and which are engaged by an adjustment member 4. The device is inserted into the cavity in a patient's vertebrae. Column 3, lines 48-65. A portion of the adjusting member 4 is engaged by a tool and rotated to urge the first member 2 and second member 3 apart from one another. A screw 16 is inserted into a threaded aperture 3 on the second member 3. The screw 16 locks the position of the adjustment member 4 with respect to the second member 3. See column 4, lines 9-18. Thus, *Saggar* does not disclose a locking clip having a first unlocked position and a second unlocked position. As discussed above in connection with the other cited references, the position of a first and second element is adjusted utilizing a third threaded element. A screw is utilized to lock the position of the first and second elements. No locking clip having a first unlocked position and a second locked position is disclosed. Claims 5, 6, 10, 12 and 13 depend directly or indirectly upon Claim 1. Thus, Claims 1, 5, 6, 10, 12 and 13 are unanticipated by *Saggar* and otherwise allowable.

Accordingly, reconsideration of Claims 1-26 is hereby respectfully solicited and the issuance of a notice of allowance for all the pending claims is hereby respectfully requested. If this response raises any issues, the Examiner is encouraged to contact Applicants' attorney at the telephone number below. If any fee is due in connection with this response, the Examiner is authorized to charge Deposit Account No. 12-1095 therefor.

Respectfully submitted,

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DIALOG(R) File 351:Derwent

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WPI Acc No: 1996-363757/199637

XRPX Acc No: N96-306668

Separating implant to replace missing vertebrae - has inner and outer cylindrical elements which have matching sets of internal grooves and ridges permitting only one way movement

Patent Assignee: JBS SA (JBSJ-N)

Inventor: AMEIL M; DINVILLE H; GAU M; HUPPERT J; JEANSON J; MARNAY T;

JEANSON J F

Number of Countries: 004 Number of Patents: 004

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
DE 19604246	A1	19960808	DE 1004246	A	19960206	199637	B
FR 2730158	A1	19960809	FR 951326	A	19950206	199639	
JP 8266564	A	19961015	JP 9618968	A	19960205	199651	
US 5723013	A	19980303	US 96595955	A	19960206	199816	

Priority Applications (No Type Date): FR 951326 A 19950206

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
DE 19604246	A1		4	A61F-002/44	
JP 8266564	A		4	A61F-002/44	
US 5723013	A		4	A61F-002/44	
FR 2730158	A1			A61F-002/44	

Abstract (Basic): DE 19604246 A

A cylindrical outer element (1) has a closed lower end from which locating lugs (7) project for fixing the implant in position. Inside the element are a series of circular grooves which in cross-section have a sawtooth profile. A vertical ridge (8) is formed along the inside of the element.

The inner cylindrical element (2) has a closed upper end with locating lugs (10) and circular outwardly projecting ridges which match the profile of the circular grooves of the outer element. A vertical slot (12) is used to engage the vertical ridge of the outer element. When implanted the inner element is pushed right into the outer element and is withdrawn to the required position.

ADVANTAGE - Implant can be expanded to required length but will not compress once set.

Dwg.3/3

Abstract (Equivalent): US 5723013 A

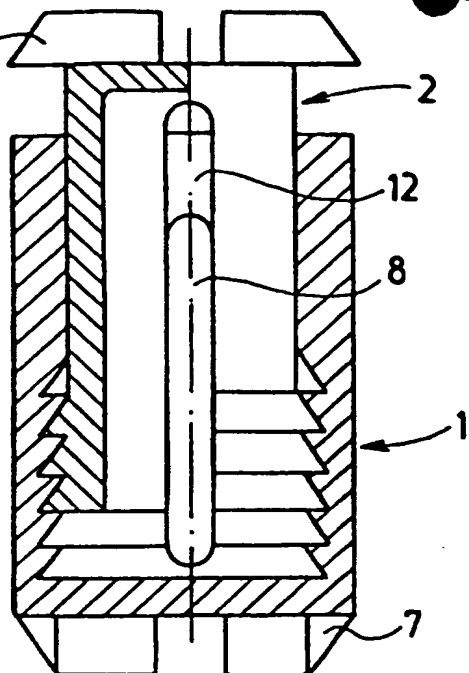
A cylindrical outer element (1) has a closed lower end from which locating lugs (7) project for fixing the implant in position. Inside the element are a series of circular grooves which in cross-section have a sawtooth profile. A vertical ridge (8) is formed along the inside of the element.

The inner cylindrical element (2) has a closed upper end with locating lugs (10) and circular outwardly projecting ridges which match the profile of the circular grooves of the outer element. A vertical slot (12) is used to engage the vertical ridge of the outer element. When implanted the inner element is pushed right into the outer element and is withdrawn to the required position.

ADVANTAGE - Implant can be expanded to required length but will not compress once set.

Dwg.3/3

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TC 3700 MAIL ROOM



Title Terms: SEPARATE; IMPLANT; REPLACE; MISS; VERTEBRA; INNER; OUTER;  
CYLINDER; ELEMENT; MATCH; SET; INTERNAL; GROOVE; RIDGE; PERMIT; ONE; WAY;  
MOVEMENT

Derwent Class: P31; P32

International Patent Class (Main): A61F-002/44

International Patent Class (Additional): A61B-017/56

File Segment: EngPI

?e pn=wo 9637170

Ref	Items	Index-term
E1	1	PN=WO 9637168
E2	1	PN=WO 9637169
E3	1	*PN=WO 9637170
E4	1	PN=WO 9637171
E5	1	PN=WO 9637172
E6	1	PN=WO 9637173
E7	1	PN=WO 9637174
E8	1	PN=WO 9637175
E9	1	PN=WO 9637176
E10	1	PN=WO 9637177
E11	1	PN=WO 9637178
E12	1	PN=WO 9637179

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S2 1 PN="WO 9637170"

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DIALOG(R)File 351:Derwent

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WPI Acc No: 1997-020903/199702

XRPX Acc No: N97-017376

Height adjustable artificial vertebral body used in orthopaedics - has  
sleeve type middle section whose wall is provided with recesses, with  
either side of this section having right handed or left handed thread

# sections

Patent Assignee: BIEDERMANN L (BIED-I); HARMS J (HARM-I)

Inventor: BIEDERMANN L; HARMS J

Number of Countries: 025 Number of Patents: 007

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 9637170	A1	19961128	WO 96EP2092	A	19960515	199702 B
DE 19519101	A1	19961128	DE 1019101	A	19950524	199703
EP 828463	A1	19980318	EP 96916090	A	19960515	199815
			WO 96EP2092	A	19960515	
HU 9801916	A2	19981228	WO 96EP2092	A	19960515	199908
			HU 981916	A	19960515	
JP 11505736	W	19990525	JP 96535343	A	19960515	199931
			WO 96EP2092	A	19960515	
US 5989290	A	19991123	WO 96EP2092	A	19960515	200002
			US 97952908	A	19971124	
KR 99014877	A	19990225	WO 96EP2092	A	19960515	200018
			KR 97708222	A	19971118	

Priority Applications (No Type Date): DE 1019101 A 19950524

Cited Patents: AT 395524; DE 4323034; DE 4409392; US 4657550

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 9637170 A1 G 16 A61F-002/44

Designated States (National): CA CN HU JP KR NO US

Designated States (Regional): AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE

US 5989290 A A61F-002/44 Based on patent WO 9637170

KR 99014877 A A61F-002/44 Based on patent WO 9637170

DE 19519101 A1 5

EP 828463 A1 G A61F-002/44 Based on patent WO 9637170

Designated States (Regional): AT CH DE ES FR GB LI

HU 9801916 A2 A61F-002/44 Based on patent WO 9637170

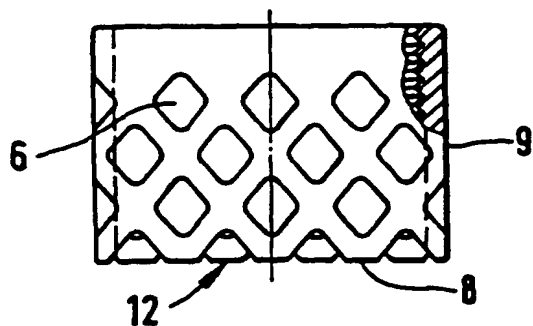
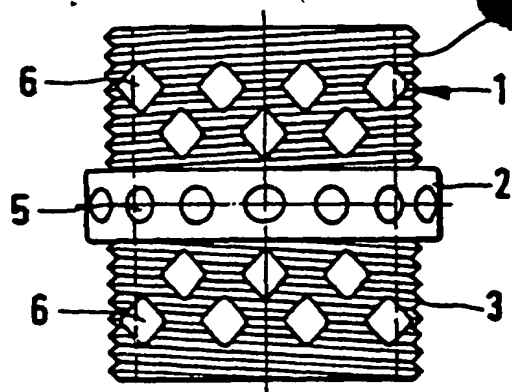
JP 11505736 W 13 A61F-002/44 Based on patent WO 9637170

Abstract (Basic): WO 9637170 A

The body has a sleeve-type middle section (1) whose wall is provided with recesses (5,6). The middle section is provided with a left-handed thread next to its first edge with a right-handed thread next to its second edge.

One thread section is connected to a cylindrical first part (7), the other thread section to a cylindrical second part (9), by appropriate threads. Both parts (7,9) likewise have walls with a number of recesses (8). Both parts are each provided with a number of teeth at their free edges.

Dwg.1/4



Title Terms: HEIGHT; ADJUST; ARTIFICIAL; VERTEBRA; BODY; ORTHOPAEDIC;  
SLEEVE; TYPE; MIDDLE; SECTION; WALL; RECESS; SIDE; SECTION; RIGHT; HAND;  
LEFT; HAND; THREAD; SECTION

Derwent Class: P31; P32

International Patent Class (Main): A61F-002/44

International Patent Class (Additional): A61B-017/70

File Segment: EngPI

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Sub account: OSTEONICS1250

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\$4.32 1 Type(s) in Format 15

\$4.74 1 Type(s) in Format 19

\$9.06 2 Types

\$23.08 Estimated cost File351

\$0.60 TELNET

\$23.68 Estimated cost this search

\$24.01 Estimated total session cost 0.692 DialUnits

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